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Application No.: 10/723827

Case No.: 57987US002

Remarks

Claims 1-24 were originally filed, and Claims 8, 9, and 11 were subsequently canceled. Independent Claims 1, 16, and 24 are being herein amended to specify that the cationic photoinitiator is selected from I-centered onium salts, S-centered onium salts, and mixtures thereof (basis therefor being found, for example, at page 8, lines 11-12, of Applicants' specification). Accordingly, Claims 5 and 7 are being canceled, and Claim 6 is being amended to adjust its dependency and to editorially correct a subscript error.

Rejection Under 35 U.S.C. Section 103

Claims 1-7, 10, 12-16, and 18-24 were rejected under Section 103(a) as being unpatentable over EP 1 348 742 A2 or Spera et al. (U.S. Patent Application Publication No. US 2003/0194560 A1, the U.S. counterpart of EP 1 348 742 A2; hereinafter, collectively addressed by reference to Spera et al.) in view of Hoffman et al. (U.S. Patent No. 6,224,793). This rejection is respectfully traversed for the following reasons.

Applicants claim a composition comprising:

- (a) at least one cationically curable species;
- (b) at least one cationic photoinitiator selected from I-centered onium salts, S-centered onium salts, and mixtures thereof; and
- (c) at least one encapsulated base selected from those represented by the formula A-B_n, wherein A is a substantially insoluble particle that comprises at least one side-chain crystallizable polymer, each B is an independently selected base unit comprising a basic species, n is an integer of at least 1, and A and B are joined by a covalent chemical bond. (See amended Claim 1 (emphasis added).) Thus, the base unit, B, of component (c) of Applicants' composition is covalently bonded to A, a substantially insoluble particle that comprises at least one side-chain crystallizable polymer. The particle, A, comprising side-chain crystallizable polymer serves as an encapsulant for the base, B_n (as explained in Paragraph [0061] and following paragraphs). The base is thus both encapsulated and covalently bonded or "polymer-bound" (see the definition at page 4 of Applicants' specification, which states that covalent bonding is required in order for a base to be termed "polymer-bound").

According to the Examiner, Spera et al. teach "the use of encapsulated or polymer-bound amines and imidazoles for curing epoxy compositions." Applicants disagree for at least the

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reason that Spera et al. do not appear to mention the term "polymer-bound" or to describe the use of covalently-bound catalysts.

Applicants previously explained (in remarks that are incorporated herein by reference) that the encapsulated catalysts described by Spera et al. either have no chemical bonding between the catalyst and the encapsulant (when wax or a thermoplastic polymer is used) or have ionic bonding between a nitrogen-containing catalyst and a microgel that contains carboxylic acid functional groups. Thus, Spera et al. fail to teach or suggest the use of Applicants' component (c), a base that is both encapsulated and covalently bonded or "polymer-bound" (to its polymeric encapsulant).

Spera et al. also fail to teach or suggest the use of Applicants' component (b), a cationic photoinitiator selected from I-centered onium salts, S-centered onium salts, and mixtures thereof. The Examiner has asserted that, although Spera et al. do not mention a cationic photoinitiator, the onium salt compounds described by Spera et al. for use as thermal catalysts are known to function also as photoinitiators. The onium compounds that are described by Spera et al., however, are those comprising phosphorus, arsenic, and nitrogen (see, for example, paragraphs [0020] and [0021]). Onium salts comprising sulfur or iodine are not included in the list. Thus, Spera et al. also fail to teach or suggest Applicants' component (b).

Hoffman et al. describe an encapsulated active agent comprising an active agent encapsulated in a crystallizable or thermoplastic polymer, wherein the particle size of the encapsulated active agent is 3,000 microns or less, and wherein the active agent is not significantly extractable from the particles under ambient conditions. The active agent "can be any material that is reactive in an environment and which needs to be separated from the environment until it is desired that the active agent react in the environment" (see column 3, lines 61-64). Preferably, the active agent is a catalyst, a curing agent, an accelerator, or a mixture thereof.

The Examiner has asserted that it would have been obvious "to select an encapsulated active agent in a side chain crystallizable polymer from those taught by Hoffman et al. as curing accelerator for an epoxy resin composition and to substitute it for the analogous encapsulated catalysts in the analogous epoxy compositions taught by" Spera et al. Hoffman et al. do nothing, however, to overcome the above-described deficiencies of Spera et al.

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Applicants refer the Examiner to the "Background of the Invention" section of Hoffman et al., which states that chemically bound active agents provide systems that exhibit good stability but slow reactivity (see, for example, column 2, lines 12-24). In addition, at column 3, lines 21-22, Hoffman et al. state that "[p]referably, the active agent is not chemically bound to the encapsulating agent."

Thus, Hoffman et al. teach away from the use of chemical bonding of any sort (between the active agent and the encapsulant), including the covalent bonding of Applicants' polymer-bound bases. Upon reading the disclosure of Hoffman et al., one skilled in the art would be surprised to learn that the covalent bonding of bases (in accordance with Applicants' invention) leaves the bases sufficiently accessible and rapidly reactive to acid generated during curing that the bases can be effective in preventing metal substrate corrosion.

Hoffman et al. also fail to describe the use of cationic photoinitiators. Thus, the combination of Spera et al. and Hoffman et al. does not provide Applicants' claimed invention. Components (b) and (c) are both lacking. Applicants therefore respectfully submit that their claimed invention is indeed patentable over this combination of references and respectfully request that the rejection under Section 103 be withdrawn.

Claim 17 was rejected under Section 103(a) as being unpatentable over EP 1 348 742 A2 or Spera et al. (U.S. Patent Application Publication No. US 2003/0194560 A1, the U.S. counterpart of EP 1 348 742 A2; hereinafter, collectively addressed by reference to Spera et al.) in view of Hoffman et al. (U.S. Patent No. 6,224,793), as applied to Claims 1-7, 10, 12-16, and 18-24 above, and further in view of Lamanna et al. (U.S. Patent No. 5,554,664). This rejection is respectfully traversed for the following reasons.

Although Lamanna et al. disclose onium salts comprising I- and S-centered cations, Lamanna et al. describe nothing to overcome the above-described deficiencies of Spera et al. and Hoffman et al. concerning Applicants' component (c). Applicants therefore respectfully submit that their claimed invention is indeed patentable over this combination of references and respectfully request that the rejection under Section 103 be withdrawn.

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Concluding Remarks

Reconsideration and allowance of Applicants' claims are respectfully requested.

Applicants thank the Examiner for the returned copies of Information Disclosure Statements that have been signed by the Examiner. Some of the references on these Statements have not been initialed, however, and Applicants respectfully request confirmation that all references have indeed been considered.

Respectfully submitted,

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Date

By: Lucy C. Weiss
Lucy C. Weiss, Reg. No.: 32,834
Telephone No.: (651) 733-1189

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833

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